

**CALIFORNIA DEPARTMENT OF TRANSPORTATION  
DUTY STATEMENT**

<b>CLASSIFICATION TITLE</b> Senior Mechanical Engineer, Caltrans (Specialist)	<b>DISTRICT/DIVISION/OFFICE</b> Division of Rail and Mass Transportation	
<b>WORKING TITLE</b> Senior Mechanical Engineer	<b>POSITION NUMBER</b> 900-075-2178-920	<b>EFFECTIVE</b>

*As a valued member of the Caltrans team, you make it possible for the Department to provide a safe, sustainable, integrated, and efficient transportation system to enhance California's economy and livability. Caltrans is a performance-driven, transparent, and accountable organization that values its people, resources and partners, and meets new challenges through leadership, innovation and teamwork.*

**GENERAL STATEMENT**

Under the direction of the Chief, Office of Rail Equipment, the incumbent performs difficult and complex engineering work related to locomotive and rail car engineering, modeling and analysis, and provides technical oversight and direction to engineering and other staff in the development and execution of railroad related equipment and facilities. Provides project management support in the development, administration and execution of locomotive and rail car procurement activities, fund management, reporting and other activities related to repair, overhaul, modification and deployment of existing rail rolling stock. Exceptional leadership, initiative, and communication skills are fundamental to carrying out the mission of this position.

**TYPICAL DUTIES**

Percentage	Duties
40% (E)	Perform and provide technical oversight for mechanical engineering work in the design of mechanical systems in rail rolling stock such as; heating, cooling, ventilation, refrigeration, plumbing, engines, brakes, machinery rooms, and appliances. Prepare or oversee the preparation of plans, specifications, estimates, material lists, and purchase requisitions. Provide technical oversight and direction to staff performing and/or reviewing engineering analyses of the performance, behavior, and integrity of materials used in the Division's rolling stock. Use a variety of information sources and analytical tools such as NASTRAN and examine various engineering documents and calculations. Develop technical specifications for the procurement, modification, maintenance and overhaul of the State-owned rail car fleet, and related components and projects. Review proposed designs, engineering documents, work orders and manuals for accuracy, completeness, and conformance with specifications, contract documents and Federal and State regulations.
35 % (E)	Evaluate contractor proposals and designs and monitor the performance of contractors in maintaining, repairing and modifying mechanical systems on Develop test and inspection procedures and strategies to address and resolve all incidents of non-compliance. Provide periodic inspection of new and rebuild materials, equipment, and production of rail equipment. Oversee the installation of mechanical systems of State-owned rail equipment to ensure

Percentage	Duties
	that all work is performed and completed in accordance with all applicable State and Federal regulations, contractual and warranty provisions, industry standards and manufacturer recommendations.
15% (E)	Develop and oversee the development of mechanical maintenance procedures and warranty work orders related to rolling stock. Monitor and evaluate equipment failures to determine cause and corrective action, perform trend analyses to predict failures and make corrections, and analyze/recommend equipment modifications or maintenance strategies to reduce and/or eliminate failure-prone components, designs or processes. <b>Direct</b> Amtrak or other contractors to perform repairs through and the development of work orders (AWCR) or by other means. Prepare cost proposals and manage repairs performed by Caltrans' designee. Review engineering documents, work orders and manuals for accuracy, completeness, and conformance with specifications, contract documents and Federal and State regulations
5% (E)	Provide technical contract management support to the Rolling Stock Procurement and Rail Equipment branches for new car acquisition, modification, rebuild, component replacement, accident repair and maintenance. Ensures contract documents and work performed conform to industry standards, manufacturer recommendations, and all State and Federal regulations. Assist in the development and approval of scope of work and task orders for procurement support activities, approval of invoices, review of submittals and deliverables, acceptance and the technical management of consultant staff assigned to task orders, development and deployment of databases, and other related activities as required. Conduct training for Caltrans employees, maintenance employees and operations employees as required.
5% (M)	Oversee and manage consultants and Subject Matter Experts (SME), in connection with the checking of designs or in the preparation of mechanical drawings and specifications for rolling stock and other rail equipment; visit contractors'/sub-contractors' work sites/facilities to determine whether materials and workmanship comply with the plans and specifications and recommends approval or disapproval of the work and the interpretation of the requirements set up by the State, FRA and the NGECC. Provides inspection support at Contractor facilities, onboard trains and other locations as necessary.

### ***SUPERVISION EXERCISED OVER OTHERS***

The incumbent does not supervise. The incumbent may direct work of one or more individuals for a specific project or act as a team leader and has program-level responsibility for department-wide performance measurement activities.

### ***KNOWLEDGE, ABILITIES AND ANALYTICAL REQUIREMENTS***

The incumbent should be familiar with the composition, operation, maintenance and repair of the Department's fleet of rail equipment, and with the Department's rail services. Incumbent must have technical knowledge of equipment and railroad-operating practices to ensure his/her recommendations will be in full compliance of industry regulations and sound equipment maintenance practices. Must have the ability to speak and write effectively; analyze situations accurately and take effective action. Must be able to utilize telephone and written communications in addition to personal contact in

addressing contract issues such as documentation and provisions, scheduling and coordination, document control, and others. Must be able to read and understand contracts, engineering plans and drawings and related documents. Must be able to read and have a basic understanding of rail equipment projects, specifications, plans and other Division of Rail functions as relates to rolling stock contracts. Must be able to use a variety of analytical techniques to resolve or contribute to the resolution of contract issues; and to develop and evaluate alternatives.

The incumbent must have a wide and thorough overview of the Department's purpose, policies, and procedures and must be able to work cooperatively and speak knowledgeably with representatives of other Caltrans units, other governmental agencies, Amtrak, rail equipment manufacturers, freight railroads, legislative staff, FRA, and individual citizens. Must speak effectively before groups and present a good image of the Division and the Department. Must be highly organized and have the ability to perform and monitor a wide variety of tasks and project functions simultaneously.

### ***PUBLIC AND INTERNAL CONTACTS***

Incumbent may have contact with representatives of other local, regional, state and federal agencies, consultants, railroads, equipment manufacturers and the general public for data gathering, information sharing and coordination. External contacts may also involve formal and informal communications with state control agencies such as the Department of Finance, Governor's Office, Business Transportation & Housing Agency, representatives of the legislature, and other transportation stakeholders in support of the Department's rail transportation goals and objectives.

### ***CONSEQUENCE OF ERROR/RESPONSIBILITY FOR DECISIONS***

Independent action and initiative are requirements for carrying out the duties of the position. Knowledge of rail equipment engineering and best practices and perspectives are essential for decisions that affect planning and project delivery both internally and outside of the Department. , Contracts that are not developed and managed properly could result in additional unknown costs to the State through claims and legal actions, project delays, loss of funding and equipment failures. Failure to keep projects moving through the project development and delivery process could result in unacceptable gaps in intercity rail passenger services, inhibit the Division of Rail from securing project funding, and subject the Department to criticism.

### ***PHYSICAL, MENTAL AND EMOTIONAL REQUIREMENTS***

The incumbent must be able to develop and maintain cooperative working relationships and ensure employees are treated in a fair and equitable manner. Must have the ability to multi-task, adapt to changes in priorities and complete tasks or projects with short notice. Develop new insights into situations and apply innovative solutions to make organizational improvements. Formulate effective strategies consistent with the Department's vision and goals. Create and sustain an organizational culture that encourages others to provide the quality of service essential to high performance.

### ***WORK ENVIRONMENT***

The incumbent will be exposed to climate-controlled environment; artificial lighting for extended periods of time. Work will include travel to rail equipment production and maintenance facilities and meeting locations. Compliance with safety procedures will be required.

I have read and understand the duties listed above and can perform them with/without reasonable accommodation. (If you believe you may require reasonable accommodation, please discuss this with the hiring supervisor. If you are unsure whether you require reasonable accommodation, inform the hiring supervisor who will discuss your concerns with the Reasonable Accommodation Coordinator.)

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Employee's Name

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Signature

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Date

I have discussed the duties with and provided a copy of this duty statement to the employee named above.

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Supervisor's Name

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Signature

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Date